



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,068	06/16/2005	Christophe Loustaudaudine	V3.12-1	3636

40306 7590 05/03/2007
SHEWCHUK IP SERVICES
533 77TH STREET WEST
EAGAN, MN 55121

EXAMINER

HAYES, KRISTEN C

ART UNIT	PAPER NUMBER
----------	--------------

3609

MAIL DATE	DELIVERY MODE
-----------	---------------

05/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,068

Applicant(s)

LOUSTAUDAUDINE ET AL.

Examiner

Kristen C. Hayes

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-31 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20070412.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on December 14, 2004 is being considered by the examiner.

Specification

2. The disclosure is objected to because of the following informalities: "The aircraft according to the invention has two or more balloons on each side of a chassis,..." (page 3, lines 27-28). Figures 1, 2, and 3 illustrate two balloons with one balloon on each side of the chassis. The specifications seems to indicate that there are always two balloons on each side of the chassis. The following change is suggested: "The aircraft according to the invention has one or more balloons on each side of a chassis,..."

Appropriate correction is required.

3. The disclosure is objected to because of the following informalities: "frame 2" (page 14, line 8). The reference number 2 is repeatedly used throughout the specification to refer to the chassis, while the reference number 21 is repeatedly used to refer to the frame. The examiner assumes for the purpose of this examination that "frame 2" on page 14, line 8 should "read frame 21".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3643

5. Claims 13,18 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The phrase "close to" in claims 13, 18 and 21 is a relative phrase which renders the claim indefinite. The phrase "close to" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The center of gravity of the aircraft is not defined in the specification. Therefore, it is not known what the relation "close to" is meant because of the broad limitation of the phrase.

7. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 31 lists a variety of onboard means of the aircraft. It is not clear whether the applicant claims each limitation or one limitation from the group of onboard means listed.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3643

10. Claims 1, 3, 5-9, 11-15 and 20-28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Silver (US Patent 1,608,822).

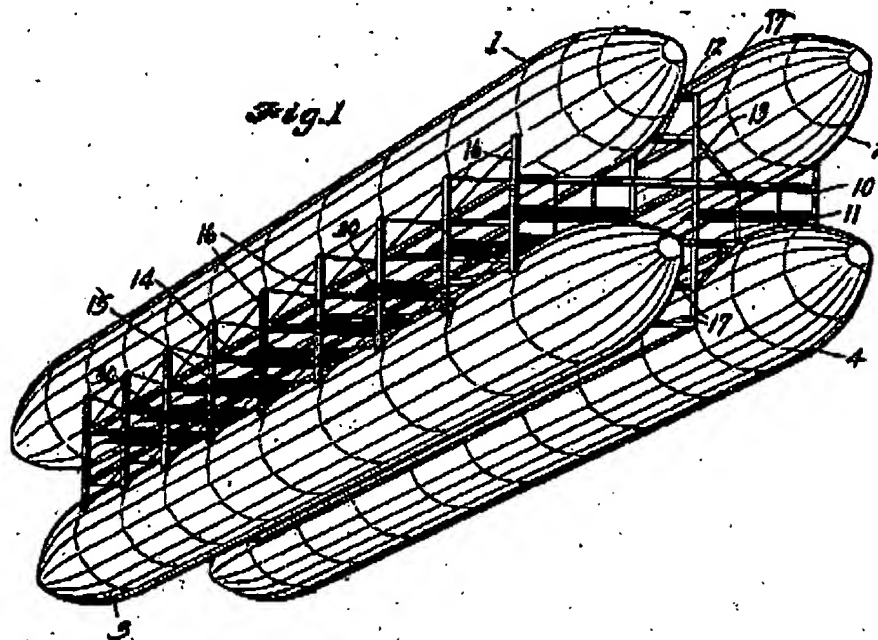


Figure 1: Figure 1 from US Patent 1,608,822

11. Regarding claim 1, with reference to Figure 1, Silver discloses a lighter than air aircraft comprised of two balloons (1) and (2) that are connected by a means forming a chassis (page 1, lines 9-11).

12. Regarding claim 3, with reference to Figure 1, Silver discloses an aircraft with the limitations of claim 1 as discussed above, and a connecting means formed by (10), (11), (12), (13), (14), (15), (16), and (17) connecting the two balloons through a mechanical connection (page 2, lines 12-14) that is articulated about an axis parallel to the longitudinal axis of the aircraft (page 1, line 96- 97).

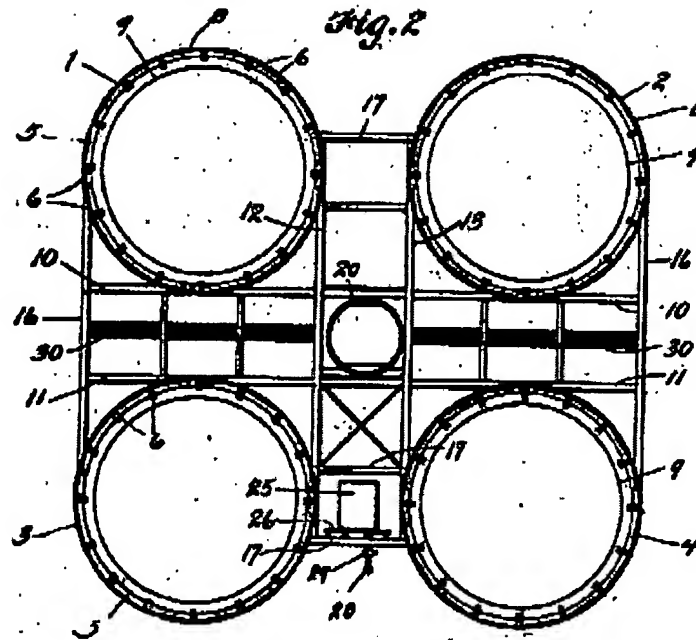


Figure 2: Figure 2 from US Patent 1,608,822

13. Regarding claim 5, with reference to Figure 2 Silver discloses an aircraft with the limitations of claim 1 as discussed above, and a carrying means (20) designed to support equipment and or at least one person (page 2, lines 36-37).

14. Regarding claim 6, with reference to Figure 2, Silver discloses an aircraft with the limitations of claim 5 as discussed above, further characterized by carrying means (20) lying within the volume between the balloons (1), (2), (3) and (4).

15. Regarding claim 7, with reference to Figure 2, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized by a connecting means formed by (10), (11), (12), (13), (14), (15), (16), and (17) forming a symmetric assembly.

Art Unit: 3643

16. Regarding claim 8, with reference to Figure 2, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized with a balloon (1) and (2), on each side of the connecting means.

17. Regarding claim 9, with reference to Figure 2, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized with a balloon (1) and (3), on each side of the connecting means.

18. Regarding claim 11, with reference to Figure 2, Silver discloses an aircraft with the limitations of claim 9 as discussed above, further characterized by balloons (1) and (3) placed one above the other.

19. Regarding claim 12, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that it comprises a means of propulsion or controlling the stability of the aircraft (page 2, lines 85-86). "The means I have provided for the propelling of the ship, consists of four engines..."

20. Regarding claim 13, Silver discloses an aircraft with the limitations of claim 12 as discussed above, further characterized by an engine that produces a thrust along the longitudinal axis of the aircraft (page 2, lines 92-95) and is located near the center of gravity (page 2, lines 86-89). Silver discloses four engines "Each of these engines... is mounted on a horizontally rotatable turret..." (page 2, lines 92-95). These engines are then able to rotate to produce a thrust along the longitudinal axis of the aircraft.

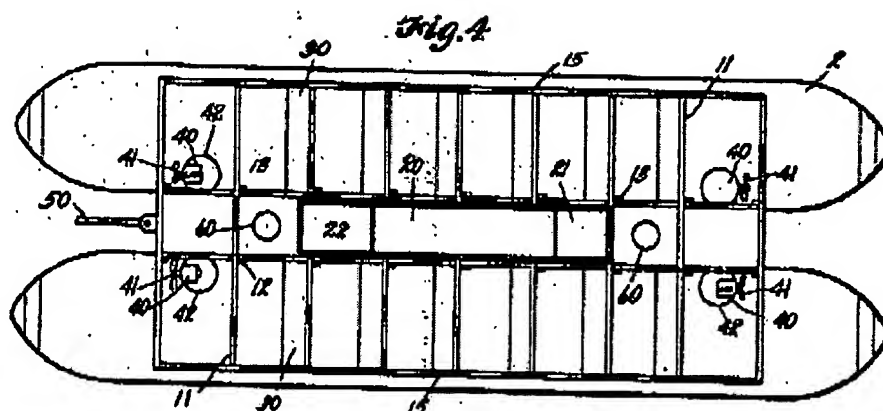


Figure 3: Figure 4 from US Patent 1,608,822

21. Regarding claim 14, with reference to Figure 4, Silver discloses an aircraft with the limitations of claim 12 as discussed above, further characterized by a pitch control means (60). Opposite thrusts of the pitch control means (60) can vary the pitch of the aircraft.

22. Regarding claim 15, with reference to Figure 4, Silver discloses an aircraft with the limitations of claim 14 as discussed above, further characterized in that the pitch control means include at least two engines (60) installed approximately on the longitudinal axis of the aircraft, on forward and one after the center of gravity of the aircraft.

23. Regarding claim 20, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that it comprises propulsion means which comprise a means of displacing the aircraft laterally (page 2, lines 85-86) (page 2, lines 99-101). "Each of these engines... is mounted on a horizontally rotatable turret..." (page 2, lines 92-95). These engines are then able to rotate to displace the aircraft laterally.

Art Unit: 3643

24. Regarding claim 21, Silver discloses an aircraft with the limitations of claim 20 as discussed above, further characterized in that the lateral displacement means comprise at least two lateral engines capable of producing thrusts in opposite directions along a horizontal axis perpendicular to the longitudinal axis of the aircraft close to the center of gravity (page 2, lines 85-90). "Each of these engines... is mounted on a horizontally rotatable turret..." (page 2, lines 92-95). These engines located near the center of gravity of the aircraft are then able to rotate to produce thrusts in opposite directions along a horizontal axis.

25. Regarding claim 22, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that it comprises directional means (page 2, lines 98-101 and 126).

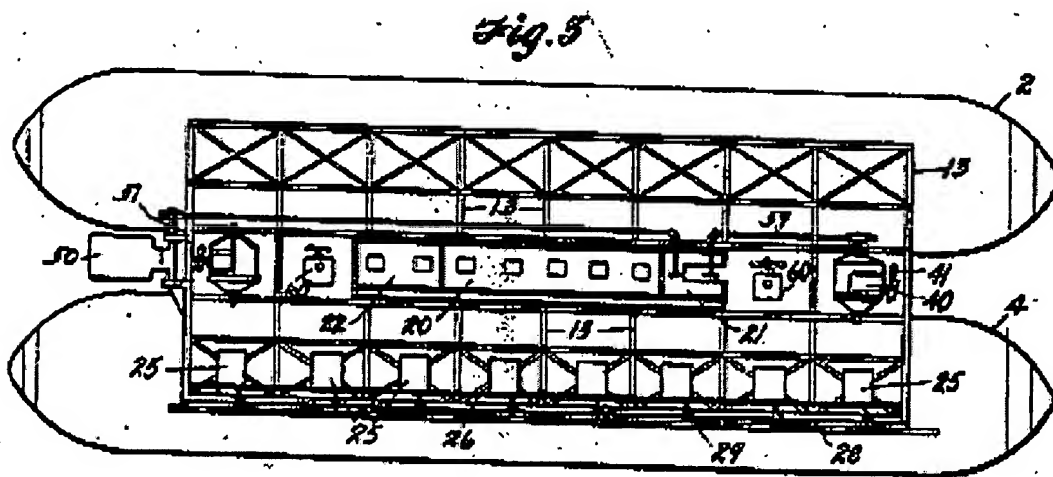


Figure 4: Figure 3 from US Patent 1,608,822

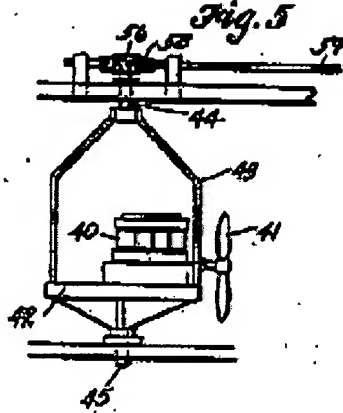


Figure 5: Figure 5 from US Patent 1,608,822

26. Regarding claim 23, with reference to Figure 3, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that the directional means comprise the control surface 50.

27. Regarding claim 24, Silver discloses an aircraft with the limitations of claim 23 as discussed above, further characterized in that it comprises at least one left control surface and at least one right control surface (page 2, lines 68-72). "These wings... could be equipped if desired with ailerons for assisting in navigating the ship."

28. Regarding claim 25, with reference to Figure 3, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that the aircraft comprises at least one vertical stabilizer 51.

29. Regarding claim 26, with reference to Figure 3, Silver discloses an aircraft with the limitations of claim 25 as discussed above, further characterized in that it comprises at least one control surface 50 (page 2, lines 68-71 and 126).

30. Regarding claim 27, with reference to Figures 3 and 5, Silver discloses an aircraft with the limitations of claim 22 as discussed above, further characterized in that the

Art Unit: 3643

directional means comprise at least one orientation engine (40) installed so as to produce at least a thrust transverse to the longitudinal axis of the aircraft. "Each of these engines... is mounted on a horizontally rotatable turret..." (page 2, lines 92-95). These engines are able to rotate to produce thrusts transverse to the longitudinal axis of the aircraft.

31. Regarding claim 28, with reference to Figure 4, Silver discloses an aircraft with the limitations of claim 22 as discussed above, further characterized in that the directional means comprise at least two orientation engines (40) mounted with respect to each other so as to produce thrusts in the opposite direction. "Each of these engines... is mounted on a horizontally rotatable turret..." (page 2, lines 92-95). These engines are able to rotate to produce thrusts in opposite directions.

32. Regarding claim 30, with reference to Figures 1 and 5, Silver discloses an aircraft with the limitations of claim as discussed above, further characterized in that the balloons (1), (2), (3), and (4) are approximately cylindrical in shape.

33. Claims 1, 9, 11, 16, 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith US Patent 5,026,003.

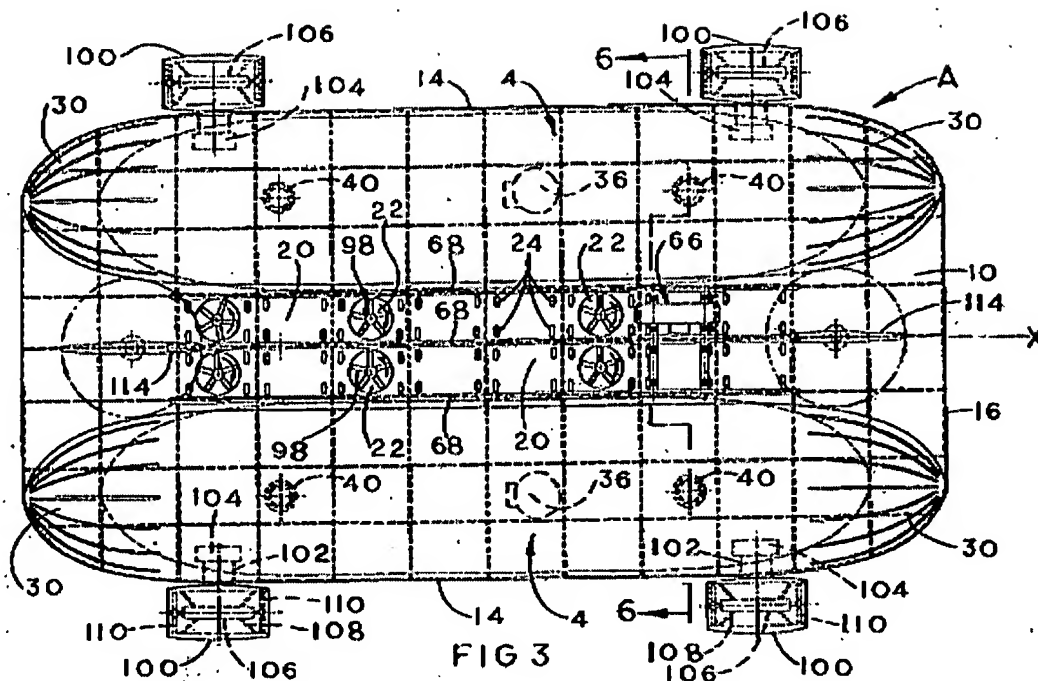


Figure 3 from US Patent 5,026,003

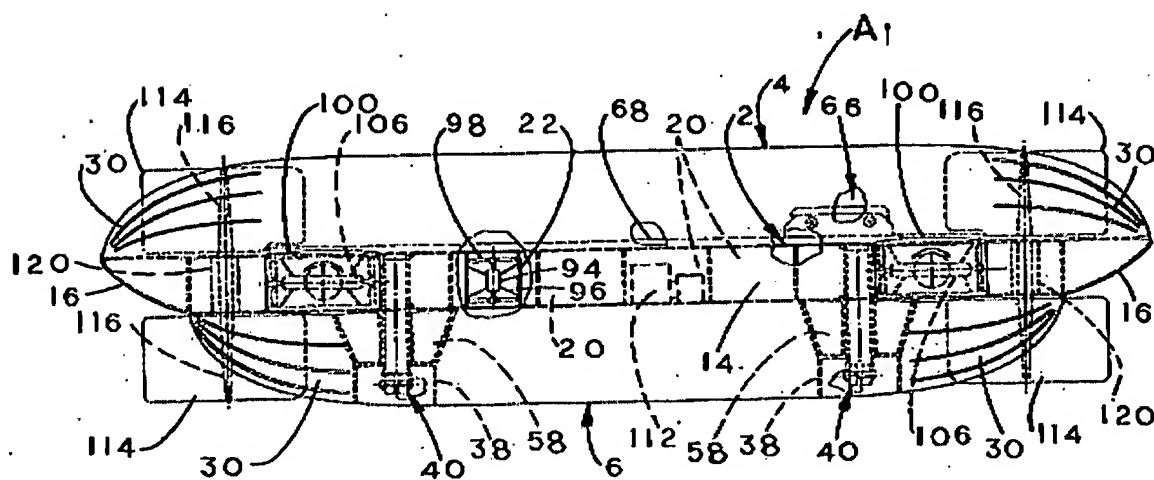


FIG 4

Figure 4 from US Patent 5,026,003

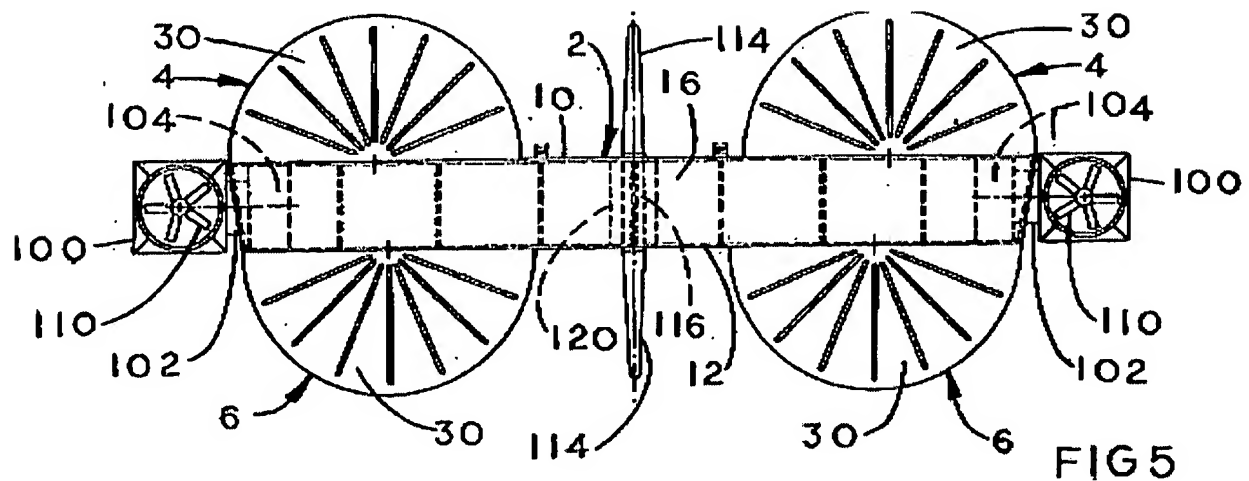


Figure 5 from US Patent 5,026,003

34. Regarding claim 1, with reference to Figure 5 Smith discloses an aircraft characterized in that it comprises at least two balloons (4) connected together by connecting means forming a chassis.

35. Regarding claim 9, with reference to Figure 5 Smith discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that it comprises two balloons (4) and (6) on each side of the connecting means.

36. Regarding claim 11, with reference to Figure 5 Smith discloses an aircraft with the limitations of claim 9 as discussed above, further characterized in that the two balloons are placed one above the other.

37. Regarding claim 16, with reference to Figure 5 Smith discloses an aircraft with the limitations of claim 11 as discussed above, further characterized in that it comprises roll control means (column 7, lines 4-8). "The motors 106... normally operate in a horizontal orientation, they may be rotated to a vertical orientation where all of the thrust

Art Unit: 3643

derived from the motors 106 is exerted vertically,...” Once in the vertical orientation, varying the differential thrust between the two engines controls the roll of the aircraft.

38. Regarding claim 17, with reference to Figure 3 Smith discloses an aircraft with the limitations of claim 16 discussed above, further characterized in that the roll control means comprise at least two engines (106) installed on each side of the longitudinal axis of the aircraft in an approximately horizontal plane.

39. Regarding claim 19, with reference to Figure 4 Smith discloses an aircraft with the limitations of claims 1, further comprising stability control means (94)(106) which can act on the altitude of the aircraft.

40. Claims 1, 29 and 31 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by McDermott US Patent 6,581,873.

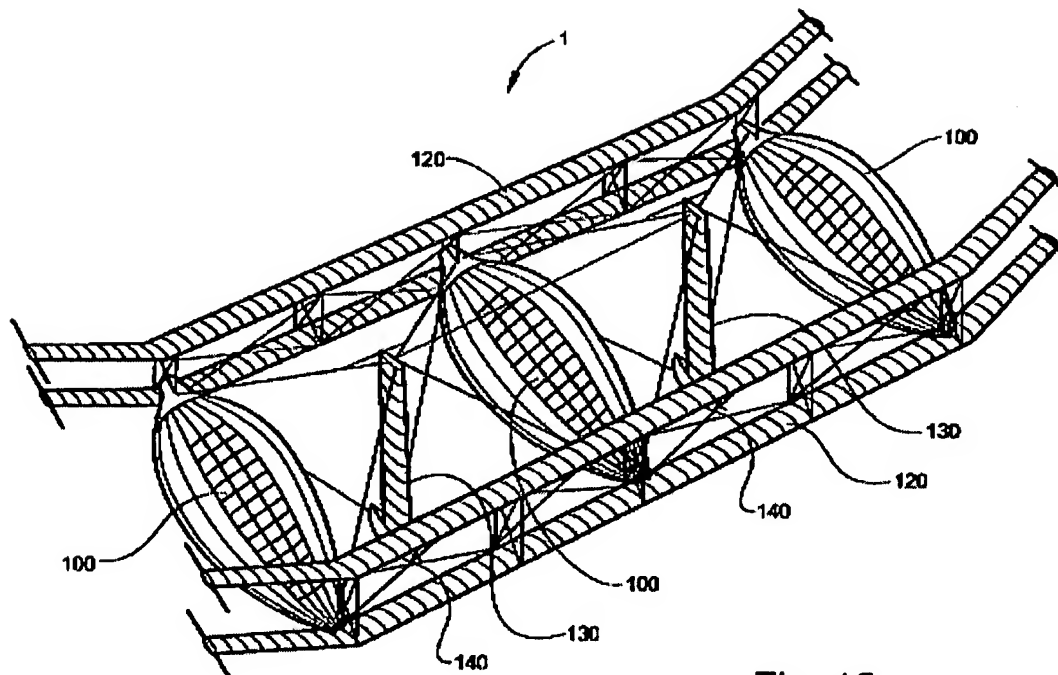


Fig. 10

Figure 6: Figure 10 from US Patent 6,581,873

41. Regarding claim 1, with reference to Figure 10, McDermott discloses an aircraft that comprises at least two balloons (100) connected together by a connecting means forming a chassis (120), (130), and (140)

42. Regarding claim 29, McDermott discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that it comprises a wireless remote control means (column 3, lines 16-17). "...maneuverable by remote control through earth based transmissions."

43. Regarding claim 31, with reference to Figure 10, McDermott teaches the limitations of claim 1 as discussed above, further comprising onboard geographic

Art Unit: 3643

positioning means (column 3, lines 11-13). "... payload control through on board sensors, including global positioning via satellites."

Claim Rejections - 35 USC § 103

44. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

45. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith US Patent 5,026,003. Smith, with reference to Figure 3, teaches the limitations of claims 1, 9, 11 and 16 as discussed above. Smith does not teach roll control means comprising roll control engines mounted on an axis perpendicular to the longitudinal axis of the said aircraft and passing through or close to the center of gravity of the aircraft. The roll control means (106) of this aircraft are located away from the center of gravity, as shown in Figure 3. Moving the roll control means closer to the center of the aircraft would centrally locate the mass of the aircraft. It is known by those of ordinary skill in the art that the position of the center of mass of an aircraft affects its stability. Therefore, to achieve more stability it would have been obvious to those of ordinary skill in the art at the time of the invention to relocate the mass, and by doing so relocate the roll control means, to a position on an axis perpendicular to the longitudinal axis of the aircraft passing through or close to the center of gravity of the aircraft.

Allowable Subject Matter

46. Claims 2 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

47. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristen C. Hayes whose telephone number is 571-270-3093. The examiner can normally be reached on Monday-Friday, 7:30-5:00, 5-4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Victor Batson can be reached on 571-272-6987. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3643

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Victor Batson
Supervisory Patent Examiner
Art Unit 3600

KCH
24 April 2007